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SOME INSECTS OF THOREAU'S WRITINGS

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It was near Concord, Massachusetts, on a beautiful summer afternoon that two companions, associates in Federal economic entomology, drove rather slowly along the winding wood-road which leads through the forest undergrowth down the gentle declivity toward Walden pond. Stopping their auto at a convenient place, they then proceeded on foot a short distance through the fragrant pine woods toward the spot, immortal in American literature, where Henry David Thoreau, he whom Channing had called the "Poet-Naturalist," had erected his now famous hut. As their feet, brushing aside the litter of the forest floor, drew them nearer to the goal of their journey, their tones became more hushed, their steps grew slower and their manner more subdued. Before them on the gentle slope, irregularly bounded on either side by slight depressions, surrounded by quiet trees, and amid peaceful gauze-like fringe of undergrowth, was to be seen a large pile of weather beaten stones—the cairn—placed there by devoted and reverent hands of pilgrims from the ends of the earth, upon the exact spot where once had stood the humble hut where the great thinker had "lived one of his lives."

Standing there in the quiet woods beside this shrine, with the soft rays of the afternoon sun reflecting from the pond surface, brokenly through the fragrant pine trees upon them a message of peace, the quiet and serenity of the place made quick appeal, and met instant response. Sensitive to the touch of beauty, and be-

coming dimly aware that the spot whereon they stood might be termed holy ground, they doffed their head-coverings with unspoken accord and enwrapped in an eloquent silence allowed the tranquillity of the scene to have full sway and work its magic upon them.

Why attempt to describe what was before their eyes when Thoreau himself already has delighted to dwell in matchless words over and over again upon its changing loveliness! While the natural scenery was there before them in all its exquisite beauty, yet the man who loved to paint unparalleled word pictures of every phase of its glory at all seasons of the year was not there to give to them his interpretation of the passing hour. Because of this there appeared in their imaginations to be some indefinable quality lacking from the hue and fragrance of the day. It might be as if they were to "be satisfied with the dews of morning or evening without their colors or the heavens without their azure."

It was a passing whimsical fancy, but the comrades remarked to each other that if only there could have been made possible such a capricious reversal of time as that of visiting this place when it had Thoreau's living presence, what an epochal interest such an event would have possessed to every one concerned! For instance, how gratified he would have been if one from an after generation might only have conveyed to him some message or hint of his growing fame in future years! How much more endurable such a vision of the future years might have made his obscurity, apparent literary failure, and the depreciation of him by his contemporaries.

After a little while the comrades strolled down to the pond side talking in low tones as they walked of the one whose steps had so often trod the path along that gentle slope. Gathering up from the edge of the water some stones suitable for the purpose, they each carried one up the slope and added it to the cairn, which by accretions of similar stones already was higher than their heads. Remembering an old comrade of boyhood days, who, though far away in miles was yet very near in sympathy and appreciation of Thoreau, one of the party added still another stone to the heap in the name of this absent friend, in an

attempt to express as it were by proxy some of the affection and admiration always manifested by him for the great naturalist. Memories of that friend and of boyhood hours they had spent happily together in reading aloud from "Robinson Crusoe" and "Walden" tended by the same token to enhance the charm of the spot and to add luster to the graciousness of its serenity. It is oftentimes a matter of extreme difficulty for some people to converse dispassionately concerning Thoreau. The theme brings up to them a wealth of tender reminiscence of a golden time in youth when Thoreau in his Walden woods and Robinson Crusoe on his desert isle were ideal heroes and made overwhelming appeal to boyish nature. Even memories of the records of the gentle St. Francis of Assisi with the birds of Bevagna may not recall for them any more loving pictures from that time when life was fresh and new, than do those of Henry Thoreau, the serene nature lover of Concord with his birds and fishes, insects and flowers.

At some distant time in the past, possibly during some storm, a large tree had fallen within the area formerly used as the doorway of the hut; its branches and projecting roots were long since gone and the trunk itself had become considerably decayed, yet its presence there still added somehow to the spot a touch of peculiar appropriateness and tended as it were to give it the one final ambrosial touch needed to make realistic the words: "We can not help being struck by the seeming though innocent indifference of Nature. . . . Like a true benefactress, the secret of service is its unchangeableness." How Thoreau would have delighted in having that old tree lie there on that spot! What aphorisms and soliloquies its presence would have provoked from him!

"We lack but open eye and ear
To find the Orient's marvels here;
The still small voice in autumn's hush,
Yon maple wood the burning bush."

Soon the comrades gravitated to the old tree and seated side by side upon its trunk they drank in anew of the fragrance of the woods and as it were thought aloud to each other of many things. Variable was the vein of fancy. The well was deep and there was little to draw with. They became painfully affected by

the consciousness of the truth that "If thou hast wanderings in the wilderness and findest not Sinai, 'tis thy soul is poor." However, perchance for them it were "better that the primrose by the river's brim be a yellow primrose and nothing more than that it be something less."

"The beauty of old Greece or Rome
Sung, painted, wrought, lies close at home;
We need but eye and ear
In all our daily walks to trace
The outlines of incarnate grace,
The hymns of gods to hear."

Much of the bark of the old tree trunk long ago had gone, but here and there fragments were still clinging to the surface of the nearly bare worm-scarred trunk, and presently the comrades, with instincts unerringly true to entomological tradition, were deftly pulling away bits of it here and there and peering hither and yon beneath it and debating with each other as to the possibility of finding insect specimens therein. Soon, sure enough, a tiny chestnut brown beetle was brought kicking and struggling into light, to the unconcealed exultation of its finder, and, after some animated debate as to its identity, it was consigned to the ever-present cyanide bottle. The occurrence of this specimen, later determined as *Tenebrioides nana* Melsh., of the Coleopterous family Ostomidæ, turned the thoughts and conversation of the comrades to a discussion of the various records by Thoreau of observations upon insects. It was vaguely apprehended by them at the moment that he had written much upon the subject, but it was not until later that a growing interest in this phase of his writings led as opportunity afforded to a more careful examination of Thoreau's published works in the Library of Congress in Washington, and then only was it clearly realized how very much work he really had done upon the subject.

There have been made several special subject studies of Thoreau's works, in fact it has been a favorite avocation within the past few decades, on part of students and admirers of Thoreau, to assemble and publish pertinent and characteristic extracts from his writings, especially from his voluminous Jour-

nal, containing his records for twenty-four years from 1837 to 1861 on various phases of Nature or upon objects or subjects of general interest. Probably some of the best known of these might be indicated in the series painstakingly compiled by Harrison Gray Otis Blake, entitled "Early Spring in Massachusetts," 1881; "Summer," 1884; "Winter," 1888; "Thoreau's Thoughts," 1890, and "Autumn," 1892. Others of somewhat similar scope and equal interest which might be indicated are "Thoreau's Calendar," 1909, by Anne Russell Marble; "Notes on New England Birds," 1910, by F. H. Allen, and "Through the Year with Thoreau," 1917, by Herbert W. Gleason.

In view of the quantity of recorded observations left by him pertaining to entomological subjects, the enquiry seemed pertinent to those interested in this phase of his work as to whether or not any attempt had been made to segregate and publish any of this material in separate form. Curiously enough, however, it has been found that nothing of this kind on the subject of insects has as yet appeared in print, though a compilation of the more important references to insects in his Journal was commenced some years ago by F. H. Allen. This work was discontinued with the Journal entry for January 6, 1853, and the material, though unpublished, was very courteously made accessible to the writer by him. It seems probable that at some distant time in the future there will be sufficient demand for it on the part of entomologists and others to warrant the labor of preparation of such a compilation. Meanwhile it may be of possible interest to the entomological fraternity and to lovers of Thoreau to learn in a general way something of the extent and character of his entomological references.

It has been therefore for the benefit of those of the fellowship of doubting Thomas, who, perhaps without giving much thought to the matter, have supposed that Thoreau really had not written very much on entomology, and, yet, who have not made an effort to settle their doubts in the obvious way, that the present writer has spent considerable time in making an analytical reading of his works from beginning to end, and, among other things, in the course of the reading, to index each and every reference of whatever brevity or completeness pertaining to insects. On the com-

TABULATION OF INSECT REFERENCES IN THOREAU'S WRITINGS

	Coleoptera	Diptera	Hemiptera	Hymenoptera	Lepidoptera	Orthoptera	Siphonoptera	Thysanura	Trichoptera	Misc.	Ephemerae	Odonata	Euplexoptera	Neuroptera	Plecoptera	Total Insects	Total Birds
Week	1	7	1	12	1	10	1			13						46	60
Walden	7	4	3	7	5	4			1	20						51	74
Maine Woods.....	2	26		2	2	4				3		2				37	68
Cape Cod	2	2		2	2					2						10	36
Excursions	8	4	2	5	14	14			1	17						65	136
Miscellaneous	1	6		3		1			1	2						13	21
Fam. Letters	4	4	1	2		2			1	3						17	41
Jour., v. 1.....	2	5	4	7	1	22	1		1	6						49	87
Jour., v. 2.....	17	14	3	18	11	44		3	1	22		1				134	211
Jour., v. 3.....	14	11	3	37	6	13	1	2	1	17						105	342
Jour., v. 4.....	26	27	26	45	15	61		2	4	42		6				254	694
Jour., v. 5.....	26	25	15	42	29	38		2	6	58		5				248	769
Jour., v. 6.....	17	22	17	31	44	26		12		47		11	1	1		236	1,009
Jour., v. 7.....	16	10	14	16	25	19		5	1	64		5		1		178	1,101
Jour., v. 8.....	8	16	8	30	14	8		7	1	34		8		2		139	578
Jour., v. 9.....	10	19	6	42	28	18			1	40		2		1		169	411
Jour., v. 10.....	10	8	5	16	12	22		1		23		1		1		99	773
Jour., v. 11.....	10	18	6	23	20	27	1	1		40						146	435
Jour., v. 12.....	16	24	6	32	26	17		1		62		6		1		254	569
Jour., v. 13.....	29	22	20	27	30	15		4	1	31		7		2		186	492
Jour., v. 14.....	6	5	2	7	12	17			1	24		2				76	226
	232	279	142	404	295	382	4	40	20	570	18	54	1	4	7	2,512	8,433

pletion after some months of this self-imposed work of indexing, he has prepared therefrom the following tabular statement from which exact data can be obtained indicating the extent of Thoreau's entomological writings as arranged by the orders of the insects considered in each of the works.

It will be noted that there are in all slightly over 2,500 references pertaining to matters entomological, and, in this connection, it is interesting to compare with these figures a similar notation of the ornithological references made at the same time which gave a total of 8,433 references. The figures, however, are eloquent as to the relative claims of his insects and his birds upon his attention.

Lest it should be felt that the mere extent of Thoreau's entomological writings is being dwelt upon here with undue emphasis, it might be well to add, in explanation, that some degree of enumeration of figures seems necessary properly to visualize their scope in order that their really unique character might be correctly apprehended. Here too the thoroughness of the survey must indicate the breadth and extent as well as the wealth of the landscape.

In any consideration of Thoreau's records of his natural history observations it should be borne in mind that he was ever more of a poet than a scientist, and that he lived before the advent of modern intensive methods of scientific research, hence, while he was a keen observer and practical recorder of facts, he was essentially a "hunter of the beautiful," and much of the time in his writings he ignored the "exclusive attitude of scientists who restrict their studies to the actual object, and so neglect its subjective effects." The entomologist therefore will be disappointed who expects to find in Thoreau's writings many long technical descriptions of insects, or detailed ecological data presented in orderly arrangement in any thing like accordance with present-day usage in the preparation of technical papers or in dealing with such themes. As stated, the reader who desires such may find a plethora in any of our modern technical periodicals. In compensation for these omissions, however, there are everywhere manifestations in profusion of the ideality of the poet-mystic added to the sympathetic vision of the old-time naturalist.

He represents that rare type: the poet and philosopher of Nature. Critics who have noted such omissions have stated that Thoreau's gifts were entirely emotional and reflective and that while he was a "sensitive feeler" he was deficient in powers of observation. His Journal, however, affords abundant evidence of the keen and delicate response of his senses and his heart both to more evident as well as less evident phases of Nature. "Sights and sounds thrilled him not less than the lofty visions and ideals which they symbolized. . . . The birds and insects spoke messages of purity and faith to his soul as well as to his ear."

The scope and character of Thoreau's references to entomological topics only may be fully appreciated by making quotations therefrom in number and length far beyond the limits of this paper. A few brief extracts pertaining to the more common orders of insects may suffice, however, to give some degree of apprehension of his style and methods of dealing with such subjects. In making selection of these passages especial effort is made to include not those which merely impart dry entomological facts—these can be found in abundance elsewhere—but, especially to select only those which might be considered representative of the character and trend of the records of his thoughts during many refreshing hours of serene communion with Nature—hours in which, as he said, the "Spirit of the Lord blessed me, and I forgot even to be good." At such times the true harvest of his daily life was "a little star-dust caught, a segment of the rainbow which I have clutched."

In the order Orthoptera there are 382 references in Thoreau's writings. The greater number of these are brief references to some phase of the activities and habits of grasshoppers or crickets. It is especially noteworthy that throughout the series of volumes there may be found over and over again references of one kind or another to sounds made by crickets. Many of these by whimsical twist of thought appear to have been written in Thoreau's happiest vein, as instance the following:

"The creaking of the crickets seems at the very foundation of all sound. At last I cannot tell it from a ringing in my ears. It is a sound from within, not without. You cannot dispose of it by listening to it. In proportion as I am stilled I hear it. It

reminds me that I am a denizen of the earth." (Journal, v. 2, p. 306), and ". . . the creak of crickets, a June sound now fairly begun, inducing contemplation and philosophic thoughts—the sultry hum of insects." (June 8, 1856, Journal, v. 8, p. 372.) Again, "The fall crickets, or is it the alder locust?—sings the praises of the day" (August 25, 1856, Journal, v. 9, p. 22), and "Heard the first cricket as I go through the warm hollow, bringing round the summer with his everlasting strain" (May 24, 1857, Journal, v. 9, p. 378), or "I see one of those peculiarly green locusts with long and slender legs on a grass stem, which are often concealed by their color. What green, herbaceous, graminivorous ideas he must have! I wish my thoughts were as seasonable as his" (September 6, 1857, Journal, v. 10, p. 26).

In more recent years a number of highly interesting accounts have been written of the habits and songs of American Orthoptera, notably those papers by H. A. Allard, W. S. Blatchley, S. H. Scudder, R. E. Snodgrass, M. P. Somes, and others. Valuable and stimulating as these are, it may be doubted if any of these writers ever approached the subject with a wider sympathy or achieved a fuller appreciation of the interrelations with all nature of his little musicians, than did Thoreau. After listening to the shrilling of crickets and noting the method by which it was produced, he says: "Thus the sounds of human industry and activity—the roar of cannon, blasting of rocks, whistling of locomotives, rattling of carts, tinkering of artisans, and voices of men—may sound to some distant ear like an earth-song and the creaking of crickets." (October 18, 1857, Journal, v. 10, p. 107.) Again, on another occasion he writes: "As I stand on the bank there, I find suddenly that I hear, low and steady, under all other sounds, the creak of the mole cricket by the riverside. It has a peculiarly late sound, suggestive of the progress of the year. It is the voice which comes up steadily at this season from that narrow sandy strip between the meadow and the water's edge. You might think it issued from that small frog, the only living thing you see, which sits so motionless on the sand. But the singer is wholly out of sight in his gallery under the surface. *Creak, creak, creak, creak, creak, creak, creak, creak.* It is sound associated with the declining year and recalls the moods of that

season. It is so unobtrusive yet universal a sound, so underlying the other sounds which fill the air—the song of birds, rustling of leaves, dry hopping sound of grasshoppers, etc.—that now, in my chamber, I can hardly be sure whether I hear it still, or remember it, it so rings in my ears.” (August 11, 1858, *Journal*, v. 11, p. 95.) Emerson in the obituary notice of Thoreau, read at his funeral, refers to the quaintness of his reference to the “Z-ing” of the locusts. Perhaps he had in mind the following passage: “That fine z-ing of locusts in the grass which I have heard for three or four days is, methinks, an August sound and is very inspiriting. It is a certain maturity in the year which it suggests. My thoughts are the less crude for it. There is a certain moral and physical sluggishness and standstill at midsummer.” (August 2, 1859, *Journal*, v. 12, p. 274.) It appears that he loved to dwell upon these sounds in relation to the dying year: “The shrilling of the alder locust is the soldier that welds these autumn days together. All bushes resound with their song, and you wade up to your ears in it. Methinks the burden of their song is the countless harvests of the year—berries, grain, and other fruits.” (August 25, 1860, *Journal*, v. 14, p. 62.)

After all, it is as has been pointed out by Bradford Torrey, “The effect of music upon the soul depends as much upon the temper of the soul as upon the perfection of the instrument,” and it is easy to apprehend that the homely creaking of the crickets brought to Thoreau a nobler and more significant message than has been brought by the grandest oratorio to many another person.

The Order Hymenoptera is represented by 404 references, the greater number of which pertain to the various species of bees and of ants. He was especially fond of watching the former at their work, and, if space permitted, many paragraphs could be cited dealing with them in a manner somewhat after the following:

“Examining, I find that every flower has a small hole pierced through the tube, commonly through calyx and all, opposite the nectary. This does not hinder its opening. The Rape of the Flower! The bee knew where the sweet lay, and was unscrupulous in his mode of obtaining it. A certain violence tolerated by nature.” (August 23, 1856, *Journal*, v. 9, p. 16.)

Or, again, similar to this: "The old *Salix sericea* is now all alive with the hum of honey-bees. This would show that it is in bloom. I see and hear one bumblebee among them, inaugurating summer with his deep bass. May it be such a summer to me as it suggests. It sounds a little like mockery, however, to cheat me again with the promise of such tropical opportunities. I have learned to suspect him, as I do all fortune-tellers. But no sound so brings around the summer again. It is like the drum of May training." (May 1, 1858, Journal, v. 10, p. 393.)

Probably no portion of Thoreau's writings has been more widely quoted, or more generally known, than the description given in "Walden" of the immortal battle of the ants. It is like unto a contest among Titans. Says William Lyon Phelps: "It is as if he had turned a prodigious lens upon the struggling insects, and they had become monsters. No one could have written the account of the World War among the ants unless he had been saturated with Homer, for the whole history is not only epic in range, breadth and intensity, but is peculiarly Homeric in the elevation of the heroes. . . . Such an account is not only thrilling in itself but its irony is unmistakable. It is a kind of Universal History of Mankind."

"One day when I went out to my wood-pile, or rather my pile of stumps, I observed two large ants, the one red, the other much larger, nearly half an inch long, and black, fiercely contending with one another. Having once got hold they never let go, but struggled and wrestled and rolled on the chips incessantly. Looking further, I was surprised to find that the chips were covered with such combatants, that it was not a *duellum*, but a *bellum*, a war between two races of ants, the red always pitted against the black, and frequently two red ones to one black. The legions of these Myrmidons covered all the hills and vales in my wood-yard, and the ground was already strewn with the dead and dying, both red and black. It was the only battle which I have ever witnessed, the only battlefield I ever trod while the battle was raging; internecine war; the red republicans on the one hand, and the black imperialists on the other. On every side they were engaged in deadly combat, yet without any noise that I could hear, and human soldiers never fought so resolutely. I watched a couple that were fast locked in each other's embraces,

in a little sunny valley amid the chips, now at noon-day prepared to fight till the sun went down, or life went out. The smaller red champion had fastened himself like a vise to his adversary's front and through all the tumblings on that field never for an instant ceased to gnaw at one of his feelers near the root, having already caused the other to go by the board; while the stronger black one dashed him from side to side, and, as I saw on looking nearer, had already divested himself of several of his members. They fought with more pertinacity than bull-dogs. Neither manifested the least disposition to retreat. It was evident that their battle-cry was conquer or die. In the meanwhile there came along a single red ant on the hill-side of this valley, evidently full of excitement, who had either dispatched his foe, or had not yet taken part in the battle; probably the latter, for he had lost none of his limbs; whose mother had charged him to return with his shield or upon it. Or perchance he was some Achilles, who had nourished his wrath apart and had now come to avenge or rescue his Patroclus. He saw their unequal combat from afar—for the blacks were nearly twice the size of the reds—he drew near with rapid pace till he stood on his guard within half an inch of the combatants; then, watching his opportunity, he sprang upon the black warrior, and commended his operations near the root of his right fore leg, leaving the foe to select among his own members; and so there were three united for life, as if a new kind of attraction had been invented which put all other locks and cements to shame. I should not have wondered by this time that they had their respective musical bands stationed on some eminent chip, and playing their national airs the while, to excite the slow and cheer the dying combatants. I was myself excited somewhat even as if they had been men. The more you think about it, the less the difference. And certainly there is not a fight recorded in Concord history, at least, if in the history of America, that will bear a moment's comparison with this, whether for numbers engaged in it, or for the patriotism and heroism displayed. For numbers and for carnage it was an Austerlitz or Dresden. Concord Fight! Two killed on the patriot's side, and Luther Blanchard wounded! Why here every ant was a Buttrick—'Fire! For God's sake fire!'—and thousands shared the fate of Davis and Hosmer. There was not one hireling there. I have

no doubt it was a principle they fought for, as much as our ancestors, and not to avoid a three penny tax on their tea; and the results of this battle will be as important and as memorable to those whom it concerns as those of the Battle of Bunker Hill, at least.

“I took up the chip on which the three I have particularly described were struggling, carried it into my house, and placed it under a tumbler on my window-sill, in order to see the issue. Holding a microscope to the first-mentioned red ant, I saw that, though he was assiduously gnawing at the near foreleg of his enemy, having severed his remaining feeler, his own breast was all torn away, exposing what vitals he had there to the jaws of the black warrior, whose breastplate was apparently too thick for him to pierce; and the dark carbuncles of the sufferer’s eyes shone with ferocity such as war only could excite. They struggled half an hour longer under the tumbler, and when I looked again the black soldier had severed the heads of his foes from their bodies, and the still living heads were hanging on either side of him like ghastly trophies at his saddle-bow, still apparently as firmly fastened as ever, and he was endeavoring with feeble struggles, being without feelers and with only the remnant of a leg, and I know not how many other wounds, to divest himself of them; which at length, after half an hour more, he accomplished. I raised the glass, and he went off over the window-sill in that crippled state. Whether he finally survived the combat, and spent the remainder of his days in some Hotel des Invalides, I do not know; but I thought his industry would not be worth much thereafter. I never learned which side was victorious, nor the cause of the war; but I felt for the rest of that day as if I had my feelings excited and harrowed by witnessing the struggle, the ferocity and carnage, of a human battle before my door.

“Kirby and Spence tell us that the battles of the ants have long been celebrated and the date of them recorded, though they say that Huber is the only modern author who appears to have witnessed them. ‘Aeneas Sylvius,’ say they, ‘after giving a very circumstantial account of one contested with great obstinacy by a great and small species on the trunk of a pear tree,’ adds that ‘this action was fought in the pontificate of Eugenius the Fourth, in the presence of Nicholas Pistoriensis, an eminent lawyer, who

related the whole history of the battle with the greatest fidelity.' A similar engagement between great and small ants is recorded by Olaus Magnus, in which the small ones, being victorious, are said to have buried the bodies of their own soldiers, but left those of their giant enemies a prey to the birds. This event happened previous to the expulsion of the tyrant Christiern the Second from Sweden. The battle which I witnessed took place in the Presidency of Polk, five years before the passage of Webster's Fugitive-Slave Bill." (Walden, Riverside ed., pp. 355-361.)

In looking through his published Journal one can often note that he never ceases to be profoundly impressed by the apparent vagaries to be found in Nature, and some of his deductions therefrom are at times a bit startling in their whimsicality: "Saw some green galls on a goldenrod three quarters of an inch in diameter, shaped like a fruit or an Eastern temple, with two or three little worms inside, completely changing the destiny of the plant, showing the intimate relation between animal and vegetable life. The animal signifies its wishes by a touch, and the plant, instead of going on to blossom and bear its normal fruit, devoted itself to the service of the insect and becomes its cradle and food. It suggests that Nature is a kind of gall, that the Creator stung her and man is the grub she is destined to house and feed. The plant rounds off and paints the gall with as much care and love as its own flower and fruit, admiring it perchance even more" (July 30, 1853, Journal, v. 5, p. 349); and, "In the wood-paths I find a great many of the Castile-soap galls, more or less fresh. Some are saddled on the twigs. They are now dropping from the shrub oaks. Is not art itself a gall? Nature is stung by God and the seed of man planted in her. The artist changes the direction of Nature and makes her grow according to his idea. If the gall was anticipated when the oak was made, so the canoe when the birch was made. Genius stings Nature, and she grows according to its idea" (Journal, v. 7, p. 10); and, "Observed some of those little hard galls on the high blueberry, packed or eaten into by some bird (or possibly mouse), for the little white grubs which lie curled up in them. What entomologists the birds are! Most men do not suspect that there are grubs in them, and how secure the latter seem under these thick

dry shells! Yet there is no secret but it is confided to some one." (January 18, 1856, *Journal*, v. 8, p. 116.)

Of the 295 references to the Order Lepidoptera, the greater number refer to various species of butterflies and moths common in that portion of New England area, and comprise in the main records of varying length and scope on the life-history, habits, and distribution. There are quite vivid accounts of metamorphoses from larva to adult of some of the more abundant species of the family Saturniidae, such as the Io, the Polyphemus, the Cecropia, and Luna moths. In these too we find that rare gift of words, that union of simplicity and freshness, which lend a charm to the writing almost independent of the ideas or the images conveyed and leaves a haunting melody, as ". . . a yellow butterfly—how hot! This meteor dancing through the air." This reminds one of another of his somewhat similar comparisons "The blue-bird carries the sky on his back," or still another—hinting of some of the compensations in the life of a land surveyor: "As I was measuring along the Marlborough road, a fine little blue-slate butterfly fluttered over the chain. Even its feeble strength was required to fetch the year about. How daring, even rash, Nature appears, who sends out butterflies so early! Sardana-palus-like, she loves extreme and contrasts." (April 28, 1856, *Journal*, v. 8, p. 315.) Concerning this originality and freshness of view, John Greenleaf Whittier wrote to his friend Daniel Ricketson under date of August 17, 1875, after Thoreau had been many years in his grave, "I was reading the other day in Thoreau. . . . What a rare genius he was; to take up his books is like a stroll in the woods or a sail on the lake, the leaves rustle, and the water ripples along his pages."

None of the 232 references to the Order Coleoptera contain data of any especial interest nor may there be found in them any information not already well known to most students of insects. Like the other references their appeal lies solely in the unexampled attitude taken by him toward the objects of his observation: "The telegraph harp sounds strongly to-day, in the midst of the rain. I put my ear to the trees and I hear it working terribly within, and anon it swells into a clear tone, which seems to concentrate in the core of the tree, for all the sound seems to proceed from the wood. It is as if you entered some world-famous

cathedral, resounding to some vast organ. The fibres of all things have their tension, and are strained like the strings of a lyre. I feel the ground tremble under my feet as I stand near the post. This wire vibrates with great power, as if it would strain and rend the wood. What an awful and fateful music it must be to the worms in the wood! No better vermifuge were needed. No danger that worms will attack this wood; such vibrating music would thrill them to death." (September 23, 1851, Journal, v. 3, p. 13.)

Or, "The east side of the Deep Cut is nearly bare, as is the railroad itself, and, on the driest parts of the sandy slope, I go looking for *Cicindela*—to see it run or fly amid the sere blackberry vines—some life which the warmth of the dry sand under the spring sun has called forth; but I see none. I am reassured and reminded that I am the heir of eternal inheritances which are inalienable, when I feel the warmth reflected from this sunny bank, and see the yellow sand and the reddish subsoil, and hear some dried leaves rustle and the trickling of melted snow in some sluiceway. The eternity which I detect in Nature I predicate of myself also. How many springs I have had this same experience! I am encouraged for I recognize this steady persistency and recovery of Nature as a quality of myself." (March 23, 1856, Journal, v. 8, p. 222-3.)

"At Nut Meadow Brook the small-sized water-bugs are abundant and active as in summer. I see forty or fifty circling together in the smooth and sunny bays all along the brook. This is something new to me. What must they think of this winter? It is like a child waked up and playing at midnight. . . . At night, of course, they dive to the bottom and bury themselves, and if in the morning they perceive no curtain of ice drawn over their sky, and the pleasant weather continues, they gladly rise again and resume their gyrations in some sunny bay amid the alders and the stubbles. I think that I never noticed them more numerous, but the fact is I never looked for them so particularly. But I fear for their nervous systems, lest this be too much activity, too much excitement. The sun falling thus warmly for so long on the surface of the brook tempts them upward gradually, till there is a little group gyrating there as in summer. What a funny way they have of going to bed! They do not take a light and

retire upstairs; they go below. Suddenly it is heels up and heads down, and they go down to their muddy bed and let the unresting stream flow over them in their dreams. They go to bed in another element. What a deep slumber must be theirs, and what dreams, down in the mud there. So the insect life is not withdrawn far off, but a warm sun would soon entice it forth. Sometimes they seem to have a little difficulty in making the plunge. Maybe they are too dry to slip under. I saw one floating on its back, and it struggled a little while before it righted itself. Suppose you were to plot the course of one for a day; what kind of a figure would it make? Probably this feat too will one day be performed by science, that maid of all work. I see one chasing a mote, and the wave the creature makes always causes the mote to float away from it. I would like to know what it is they communicate to one another, they who appear to value each other's society so much. How many water-bugs make a quorum? How many hundreds does their Fourier think it takes to make a complete bug? Where did they get their backs polished so? They will have occasion to remember this year, that winter when we were waked out of our annual sleep! What is their precise hour for retiring? . . . Ah, if I had no more sins to answer for than a water-bug!" (January 24, 1858, *Journal*, v. 10, pp. 255-256.)

In reading Thoreau's writings one is impressed by the fact that a great many passages therein, some of them couched in language of rarest beauty, contain thoughts which we recognize immediately as our own, but which somehow we have never been able adequately to formulate into words, and we become vastly encouraged to see them thus robed and adorned. Then too we are stimulated to find that another has been able through the humble dew drop on the grass blade or the "Golden and coppery reflections from a yellow dor-bug's coat of mail in the water" to find comfort and to receive from them a message that through all human vicissitudes the good God is still running the world. Said Emerson at Thoreau's grave: "The charm of personality perishes with the memory of those who have felt its spell; the inspiration of the Thinker is the deathless inheritance of the race." We are somehow reminded of this by such passages as these: "Have not the fireflies in the meadow relation to the stars above, Etincelant?" "Do not the stars, too, show their light for

love, like the fireflies?" (June 16, 1852, *Journal*, v. 4, p. 109), and "The fireflies in the meadows are very numerous, as if they had replenished their lights from the lightning. The far-retreated thunder-clouds low in the southeast horizon and in the north, emitting low flashes which reveal their forms, appear to lift their wings like fireflies; or it is a steady glow like the glow-worm." (June 21, 1852, *Journal*, v. 4, p. 129.) Or, "glow-worms . . . look like some kind of rare and precious gem, so regularly marked, far more beautiful than a uniform mass of light would be" (August 8, 1857, *Journal*, v. 10, p. 4). Again, "What were the fireflies light, if it were not for darkness? The one implies the other." (June 25, 1852, *Journal*, v. 4, p. 146.)

While there are only fifty-four references to the order Odonata, selection may be made from them which are typical of one who dwells serenely in a kingdom of fancy and in which come moments freighted with enviable richness of imagination: ". . . the abundant small dragon-flies of different colors, bright-blue and lighter, looped along the floating vallisneria, make a very lively and gay appearance. I fancy these bright loops adorn or set forth the river like triumphal arches for my procession, stretching from side to side." (August 1, 1856, *Journal*, v. 8, p. 441.) Again, of dragon-flies he says: "How lavishly they are painted! How cheap was the paint! How free was the fancy of their Creator!" These remind one of another of his apothegms: "Better trivial days with faith than the fairest ones lighted by sunshine alone." In another place he discusses in somewhat like vein, "If the day and the night are such that you greet them with joy and life emits a fragrance like flowers and sweet scenting herbs, is more elastic, more starry, more immortal—that is your success."

Thus the magic associated with the name of Henry Thoreau has its charm for thousands of devoted admirers of his writings both in America and in Europe, and with the passing of the years the number of these is steadily growing. More and more apparent becomes the truth of Emerson's statement about him that "The country knows not yet, or in the least part, how great a son it has lost." This growing interest and appeal is evinced not only by the demand for and steady sale of his works in the various tasteful and attractive editions issued at frequent inter-

vals by his publishers, but also is shown in the ever-increasing number of books, periodical and other publications concerning him, his personal history, his associates, his environment, the fascinating inconsistencies of his philosophy, and his attitude toward and outlook upon the universe. We could spare many ponderous tomes of natural history disquisitions rather than a passage of his from "Walden" regarding the tiny insect upon the forest floor, for it more nearly penetrates in sympathy and discernment into the heart of things than does many a ream of tedious and involved technical detail! "As I stand over the insect crawling amid the pine needles on the forest floor, and endeavoring to conceal itself from my sight, and ask myself why it will cherish those humble thoughts, and hide its head from me who might, perhaps, be its benefactor, and impart to its race some cheering information, I am reminded of the greater Benefactor and Intelligence that stands over me the human insect."

And, again: "Every one has heard the story which has gone the rounds of New England, of a strong and beautiful insect which came out of the dry leaf of an old table of apple-tree wood, which had stood in a farmer's kitchen for sixty years, first in Connecticut, and afterwards in Massachusetts—from an egg deposited in the living tree many years earlier still, as appeared by counting the annual layers beyond it; which was heard gnawing out for several weeks, hatched perchance by the heat of an urn. Who does not feel his faith in a resurrection and immortality strengthened by hearing of this? Who knows what beautiful and winged life, whose egg has been buried for ages under many concentric layers of woodiness in the dead dry life of society, deposited at first in the alburnum of the green and living tree, which has been gradually converted into the semblance of its well-seasoned tomb—heard perchance gnawing out now for years by the astonished family of men, as they sat around the festive board—may unexpectedly come forth from amidst society's most trivial and handselled furniture, to enjoy its perfect summer life at last!"

And so as the two comrades set that afternoon on the log at Walden and talked to each other of Thoreau and his writings, it was the unspoken thought of both that most can feel with a deep intensity the felicities of such a treasure-house of Nature

and yet be utterly unable to find words with which to give adequate expression to the emotions. The delicious aroma of the pines standing as sentinels about the cairn, the rippling silver of the surface of the little lake, the curving here and there of its green-bordered shores, the hills melting away beyond in gray-blue haze, all united in imparting a message of Eden-like serenity and peace. After such an experience the two comrades knew that they would never cease to remember with delight the charm and fragrance of Walden woods! Nor could they ever cease to remember the concluding message of optimism in the little volume penned on that spot! "Only that day dawns to which we are awake. There is more day to dawn. The sun is but a morning star."



FIG. 1. View of Thoreau's Cairn at Walden.



FIG. 2. View of Walden from Thoreau's Cove, showing Emerson's Cliffs in distance.